

REMARKS

Claims 1-6 have been rejected by the Examiner under 35 U.S.C. §103(a) as being unpatenable over Maruko U.S. Patent 6,071,201 in view of Berman et al. U.S. Patent 3,784,209. This rejection is respectfully traversed.

The present invention relates to a multi-piece solid golf ball having excellent flight performance and an excellent shot feel at the time of hitting the golf ball while achieving good workability in the making of the golf ball. The golf ball is composed of an inner core layer, an outer core layer and a cover. In the method of manufacturing the golf ball, the present invention provides a good releaseability from a mold because the core outer layer does not contain zinc aculeate. Also, both the center of the core and the core outer layer are made of a rubber composition and in addition, in the present method an unvulcanized core center and a semi-vulcanized or unvulcanized core outer layer are integrally vulcanized. More specifically, the present invention is directed to a method of making a multi-piece solid golf ball comprising the steps of:

- (a) molding a rubber composition for a center in a spherical shape to form an unvulcanized center,
- (b) placing a rubber composition for a core outer layer in a mold having a semi-spherical cavity, and either semi-vulcanizing

the rubber composition or heating the rubber composition to such a degree that the rubber composition neither semi-vulcanizes nor shrinks between the semi-spherical cavity and a male plug mold to form a semi-vulcanized or unvulcanized semi-spherical half-shell for the core outer layer,

(c) after removing the male plug mold, mounting the unvulcanized center formed in step (a) on a concave portion of the semi-vulcanized or unvulcanized semi-spherical half-shell for the core outer layer, and covering the unvulcanized center with a semi-vulcanized or unvulcanized semi-spherical half-shell for the core outer layer separately formed in the same manner as set forth in the step (b) to integrally vulcanize,

(d) optionally, repeating the step (c) to form a core, and

(e) covering the core with a cover,

wherein the rubber composition for the core outer layer does not contain zinc salt of unsaturated carboxylic acid.

The Maruko reference is relied upon by the Examiner to show a method of making two-layer golf ball core by molding an inner core layer in a spherical

shape, placing a rubber composition for a core outer layer in a mold having a semi-spherical cavity and semi-vulcanizing the rubber composition between the semi-spherical cavity and a male plug mold to form a semi-vulcanized half-shell for the core outer layer. After removing the male plug mold, the Maruko patent teaches mounting the core center on a concave portion of the semi-vulcanized half-shell for the core outer layer, covering the core center with a semi-vulcanized half-shell for the core outer layer separately formed in the same manner as the other half-shell to integrally vulcanize, and covering the core with a cover. The Maruko patent also teaches the use of rubber composition that does not contain a zinc salt of unsaturated carboxylic acid. As the Examiner notes, the Maruko does not teach molding an unvulcanized center. Furthermore, the Maruko patent uses a resin for it's inner core rather than a rubber composition. Since the outer core layer of the Maruko patent is formed of a polybutadiene rubber, the solid core of the Maruko reference has a resin-rubber two-layered construction. Furthermore, since the cover of the golf ball of the Maruko reference is formed of a resin, the golf ball of the Maruko reference has a resin-rubber-resin three-layer construction.

The Examiner, recognizing the deficiencies of the Maruko reference has further relied upon the Berman et al. reference in the attempt suggestion a present invention. However, the Berman et al. reference in contradistinction

from the Maruko reference has a two-layer construction, that is a rubber-rubber construction and not the three-layer resin-rubber-resin construction of the Maruko patent. Thus, the Examiner in trying to fill the deficiencies of the Maruko patent is combining references which have completely dissimilar constructions which leads to a strong conclusion of lack of motivation for combining the references as suggested by the Examiner in the Office Action letter. In addition, the Maruko patent teaches away from using an inner-core made of a rubber composition (see column 2, line 62 to column 3, line 3) which again establishes that the Examiner has failed to establish a *prima facie* case of obviousness in combining the references as suggested in the Examiner's Office Action letter. The advantages of the Maruko patent are created by using a resin rather than a rubber composition for the solid core (see "example" starting at column 5, especially compared to example 3). Therefore, the Maruko patent provides no motivation or suggestion to modify the inner core layer to anything other than a resin composition.

Moreover, in the examples of the Maruko reference, the golf balls of all examples 1 to 6, which have excellent performance, have the resin-rubber two-layered cores, but the golf ball of comparative example 3, which exhibits poor performance, only has a rubber-rubber two-layered core. Since the strongest rational for combining references is the expectation of some advantage, and

since the Maruko patent does not recognize, either expressly or impliedly, any advantage of having an inner core layer made of a rubber composition, for these reasons, it is believed that the Examiner has failed to establish a *prima facie* case of obviousness.

Another feature of the present invention is that the rubber composition of the core outer layer does not contain a zinc salt of an unsaturated carboxylic acid. This is explained on page 10, line 24 to page 11, line 21 of the present application. The rubber composition containing zinc acrylate has a very poor releasability from a mold property when vulcanizing the rubber composition, but it is required to contain zinc acrylate in the rubber composition for the center of the core in order to maintain good rebound characteristics in the resulting golf ball. Therefore in the method of the present invention, the rubber composition containing no zinc acrylate is used for the core outer layer, which is in contact with the mold when vulcanizing the rubber composition. However, a rubber composition containing zinc acrylate is used for the center, which is not in contact with the mold when vulcanizing the rubber composition. Thus, in referring to claim 1 of the present application, the unvulcanized center contained a zinc salt of an unsaturated carboxylic acid is used in step (a) and the core outer layer which does not contain a zinc salt of an unsaturated carboxylic acid is used in step (c). Accordingly, a multi-piece

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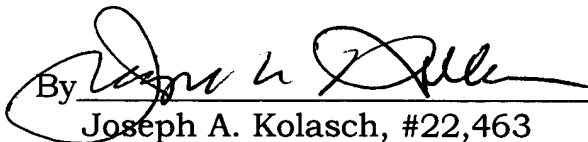
Applic. No. 09/916,511
Art Unit 1732
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below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Pursuant to 37 C.F.R. § 1.17 and 1.136(a), Applicants respectfully petition for a two (2) month extension of time for filing a response in connection with the present application. The required fee of \$430.00 is enclosed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Joseph A. Kolasch, #22,463

JAK/te
0020-4881P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000